IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application. No: 10/053,521	§
Filed: January 18, 2002	§
Inventor(s): Jeffrey Kodosky and Jack MacCrisken	§ § § §
Title: Simulation, Measurement and/or Control System and Method with Coordinated Timing	§ § § § § §
Examiner: Pierre Louis, Andre	§ § §
Group/Art Unit: 2123	§

Atty. Dkt. No: 5150-42901

APPEAL BRIEF

Dear Sir/Madam:

Further to the Notice of Appeal filed December 18, 2006, Appellant presents this Appeal Brief. Appellant respectfully requests that this appeal be considered by the Board of Patent Appeals and Interferences.

I.   REAL PARTY IN INTEREST

The subject application is owned by National Instruments Corporation, a corporation organized and existing under and by virtue of the laws of the State of Delaware, and having its principal place of business at 11500 N. MoPac Expressway, Bldg. B, Austin, Texas 78759-3504.

II.   RELATED APPEALS AND INTERFERENCES

No related appeals or interferences are known which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III.   STATUS OF CLAIMS

Claims 2-18 stand rejected and are the subject of this appeal. A copy of claims 2-18 incorporating entered amendments is included in the Claims Appendix hereto.

IV.   STATUS OF AMENDMENTS

All amendments have been entered. The Claims Appendix hereto reflects the current state of the claims.

V.   SUMMARY OF THE INDEPENDENT CLAIMS

Independent claim 2 relates generally to a system for performing a simulation. The system comprises a measurement/control program (*see, e.g., measurement/control program 200 of FIGs. 2 and 5; p. 12, lines 4-5*). The system also comprises a simulation program (*see, e.g., simulation program 202 of FIGs. 2 and 5; p. 12, lines 4-5*). The system also comprises a first program (*see, e.g., execution coordination kernel 204 of FIGs. 2 and 5; p. 12, lines 4-5*). The system also comprises an input device. (*See, e.g., I/O channels 250 of FIG. 5 and devices connected to host computer 102 in FIGs. 3A and 3B; p. 18, lines 23-24; p. 13, lines 27 – p. 14 line 6*).

The system can be configured to turn a simulation mode either on or off. The first program is operable to receive a request for input from the measurement/control program and determine whether the system is in simulation mode. The first program is operable to selectively route the request for input, depending on whether the system is in simulation mode. Selectively routing the request for input comprises routing the request for input to the simulation program if the system is in simulation mode and routing the request for input to the input device if the system is not in simulation mode. (*See p. 8, line 20 – p. 9, line 8*).

Independent claim 17 relates generally to a method for performing a simulation. The method comprises turning a simulation mode either on or off in response to user input. (*See p. 8, line 20 – p. 9, line 8*). The method further comprises executing a measurement/control program and executing a simulation program, wherein the simulation program is operable to simulate a system. (*See, e.g., FIGs. 2 and 5*).

The method further comprises receiving a request for input from the measurement/control program, determining whether the simulation mode is turned on or off, and selectively routing the request for input, depending on whether the simulation mode is turned on or off. Selectively routing the request for input comprises routing the request for input to the simulation program if the simulation mode is turned on and routing the request for input to an input device if the simulation mode is turned off. (*See FIGs. 2 and 5; p. 8, line 20 – p. 9, line 8*).

Independent claim 18 relates generally to a computer-readable memory medium comprising program instructions for performing a simulation. The program instructions are executable to turn a simulation mode either on or off in response to user input. (*See p. 8, line 20 – p. 9, line 8*). The program instructions are also executable to receive a request for input from a measurement/control program, determine whether the simulation mode is turned on or off, and selectively route the request for input, depending on whether the simulation mode is turned on or off. Selectively routing the request for input comprises routing the request for input to a simulation program if the simulation mode is turned on and routing the request for input to an input device if the simulation mode is turned off. (*See FIGs. 2 and 5; p. 8, line 20 – p. 9, line 8*).

VI.   <u>GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL</u>

Claims 2-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Blake et al., U.S. Patent No. 5,574,854 (hereinafter "Blake"), in view of Bilger, U.S. Patent No. 6,912,429 (hereinafter "Bilger").

VII.   ARGUMENT

Claims 2-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Blake et al., U.S. Patent No. 5,574,854 (hereinafter "Blake"), in view of Bilger, U.S. Patent No. 6,912,429 (hereinafter "Bilger").   Appellant respectfully traverses these rejections.

Claim 2 recites in pertinent part, a first program, wherein the first program is operable to:

> selectively route the request for input, depending on whether the system is in simulation mode, wherein selectively routing the request for input comprises:
> routing the request for input to the simulation program if the system is in simulation mode;
> routing the request for input to the input device if the system is not in simulation mode.

The Examiner asserts that this subject matter is substantially taught by Blake but that Blake fails to teach determining whether the system is in simulation mode and fails to teach that the system can be configured to turn the simulation mode on or off. Appellant disagrees and submits that Blake fails to teach much more of the above-recited subject matter than just these limitations.

Blake relates to a method and system for simulating the execution of an application program.   A simulation system first records the interaction between the application program and an existing operating system (an old operating system) during an execution of the application program.   The simulation system then takes this recorded interaction and simulates the interaction with a new operating system.   (See Col. 4, lines 26-34).

The Examiner has apparently equated the first program recited in claim 2 with Blake's Real-Time Logger 2302 and has equated the simulation program recited in claim 2 with Blake's Simulator 2303, both of which are illustrated in FIG. 23.   However, Blake teaches nothing at all about the Real-Time Logger 2302 selectively routing a request for input to either the Simulator 2303 or to an input device.   Blake instead teaches that, "A real-time logger 2302 intercepts service requests (function calls) of an application program 2301 intended for an old server program and sends the request to a simulator

program 2303." (Col. 49, lines 57-60.) There is simply no teaching whatsoever of the Real-Time Logger 2302 routing the service requests to anything other than the simulator program 2303.

Appellant thus submits that Blake clearly does not teach the limitations in claim 2 on which the 103(a) rejection depends on Blake to teach, for at least the reasons given above. Furthermore, the combination of Blake with Bilger still does not teach or suggest the concept of a first program that is operable to selectively route a request for input to either a simulation program or an input device. There is simply no teaching or suggestion in the references, taken either singly or in combination, regarding selectively routing a request for input to either a simulation program or to an input device. Thus, Appellant respectfully submits that claim 2 is patentably distinct over the cited references for at least this reason.

Furthermore, claim 2 also recites the limitations of, "a first program" and "a measurement/control program", wherein the first program is operable to receive a request for input from the measurement/control program. Blake teaches a client program that requests services of a first server program. However, Appellant can find no teaching in Blake of a first program operable to receive a request for input from a measurement/control program, as recited in claim 2. Appellant respectfully submits that these limitations are not taught by the cited references, taken either singly or in combination, and thus, claim 2 is also allowable for this additional reason.

Furthermore, as the Board is certainly aware, "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)" as stated in the MPEP §2142 (*emphasis added*).

As held by the U.S. Court of Appeals for the Federal Circuit in *Ecolochem Inc. v. Southern California Edison Co.*, an obviousness claim that lacks evidence of a suggestion or motivation for one of skill in the art to combine prior art references to produce the claimed invention is defective as hindsight analysis. Furthermore, the showing of a suggestion, teaching, or motivation to combine prior teachings "must be clear and particular. . .Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence'." *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). The art must fairly teach or suggest to one to make the specific combination as claimed. That one achieves an improved result by making such a combination is no more than hindsight without an initial suggestion to make the combination.

Appellant respectfully submits that there is no clear and particular teaching or suggestion in the prior art for combining Bilger with Blake. The Examiner states that,

> "It would have been obvious to one ordinary skilled in the art at the time of the applicant's invention to combine the home automation system and method of Bilger with the simulation method and system of Blake et al. for the purpose of turning on/off and controlling the mode of simulation because Bilger teaches the advantage of using the attributes default set up in Cross to minimize time required to program Cross (col.26 lines 24-40)."

Appellant disagrees. Bilger relates generally to a home automation system and method for automatic control of devices (e.g., lights, stereos, etc.) in a home. (See Abstract and Background of the Invention). Bilger teaches that the automation of the devices in the home is controlled by a software program called "Cross" (See Col. 12, lines 32-35) and that Cross can be set to either a partial simulation mode in which no actual automated control occurs or a full simulation mode in which objects are automatically controlled (See Col. 22, lines 25-30).

As discussed above, Blake on the other hand relates generally to a method and system for simulating the execution of a software program.

The problem of automatic control of devices in a home is obviously a very different problem than the problem of simulating the execution of a software program. Appellant respectfully submits that the Examiner's proposal of combining Bilger's home automation system and method with the software simulation method and system of Blake

"because Bilger teaches the advantage of using the attributes default set up in Cross to minimize time required to program Cross" does not amount to a clear and particular teaching or suggestion for combining the references. Appellant respectfully submits that the Examiner's suggested motivation of using default attributes to minimize the time to program a home automation control program such as Cross is irrelevant to Blake's invention, and in fact, Bilger's entire disclosure bears little or no relevance to Blake's invention. In any case, there is certainly no clear and particular teaching or suggestion for combining the simulation mode of Bilger's home automation control program (Cross) with Blake's system.

Appellant thus respectfully submits that claim 2 is patentably distinct over the cited references for at least the reasons set forth above. Inasmuch as independent claims 17 and 18 recite similar limitations as claim 2, Appellant respectfully submits that these claims are also patentably distinct over the cited references, for reasons similar to those discussed above.

Appellant also submits that numerous ones of the claims dependent on claim 2 include further distinctions over the cited references. Appellant notes that although the dependent claims recite additional limitations beyond the limitations in claim 2, and although the dependent claims recite different limitations from each other, the Examiner simply cites the same portions of Blake in the rejection of all of the dependent claims (the same portions as cited in the rejection of claim 2) and does not clearly explain the reasons for the rejections of the dependent claims.

Claim 3 recites the further limitation of, "wherein the measurement/control program performs the request for input identically, regardless of whether or not the system is in simulation mode." Appellant respectfully submits that the cited references, taken either singly or in combination, do not teach a measurement/control program that performs a request for input, wherein the request for input is received by a first program, and wherein the measurement/control program performed the request for input identically, regardless of whether or not the system is in simulation mode.

Claim 4 recites the system of claim 2, further comprising:

an output device;
wherein the first program is further operable to:
    receive a request for output from the measurement/control program; and
    selectively route the request for output, depending on whether the system is in simulation mode, wherein selectively routing the request for output comprises:
        routing the request for output to the simulation program if the system is in simulation mode;
        routing the request for output to the output device if the system is not in simulation mode.

Appellant submits that the cited references, taken either singly or in combination, do not teach selectively routing a request for output to either a simulation program or to an output device, depending upon whether a system is in simulation mode.

Claim 5 recites the further limitations of,

wherein the first program determines that the system is in simulation mode and routes the request for input to the simulation program;
wherein the first program is further operable to:
    receive results for the input request from the simulation program; and
    pass the results received from the simulation program to the measurement/control program.

Appellant submits that the cited references, taken either singly or in combination, do not teach a first program operable to receive results for an input request from a simulation program and pass the results received from the simulation program to a measurement/control program.

Claim 6 recites the further limitations of,

wherein the request for input comprises a request for input through a first I/O channel;
wherein the first program is further operable to determine that the first I/O channel is mapped to a first software routine of the simulation program;
wherein said routing the request for input to the simulation program comprises routing the request for input to the first software routine of the simulation program.

Appellant submits that the cited references, taken either singly or in combination, do not teach these additional limitations.

Claim 10 recites the system of claim 2, further comprising:

a first computer system, wherein the input device is coupled to the first computer system;
wherein the measurement/control program executes on the first computer system.

Appellant submits that the cited references, taken either singly or in combination, do not teach these additional limitations.

Claim 12 recites the system of claim 10, with the further limitations of,

a second computer system, wherein the second computer system is coupled to the first computer system by a network;
wherein the simulation program executes on the second computer system.

Appellant submits that the cited references, taken either singly or in combination, do not teach these additional limitations.

Claim 15 recites the further limitations of,

wherein the measurement/control program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

Claim 16 recites the further limitations of,

wherein the simulation program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

Appellant submits that the cited references, taken either singly or in combination, do not teach the concept of a graphical program that comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 2-18 was erroneous, and reversal of the decision is respectfully requested.

The fee of $500.00 for filing this Appeal Brief is being paid concurrently via EFS-Web. If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above-referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Meyertons, Hood, Kivlin, Kowert & Goetzel P.C., Deposit Account No. 50-1505/5150-42901/JCH.

Respectfully submitted,

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IX.   CLAIMS APPENDIX

The following lists the claims as incorporating entered amendments, and as on appeal.

1. (Canceled)

2. (Previously Presented) A system for performing a simulation, the system comprising:

a first program;

a measurement/control program;

a simulation program; and

an input device;

wherein the system can be configured to turn a simulation mode either on or off;

wherein the first program is operable to:

receive a request for input from the measurement/control program;

determine whether the system is in simulation mode; and

selectively route the request for input, depending on whether the system is in simulation mode, wherein selectively routing the request for input comprises:

routing the request for input to the simulation program if the system is in simulation mode;

routing the request for input to the input device if the system is not in simulation mode.

3. (Previously Presented) The system of claim 2,

wherein the measurement/control program performs the request for input identically, regardless of whether or not the system is in simulation mode.

4. (Previously Presented) The system of claim 2, further comprising:

an output device;

wherein the first program is further operable to:

receive a request for output from the measurement/control program; and

selectively route the request for output, depending on whether the system is in simulation mode, wherein selectively routing the request for output comprises:

routing the request for output to the simulation program if the system is in simulation mode;

routing the request for output to the output device if the system is not in simulation mode.

5. (Previously Presented) The system of claim 2,

wherein the first program determines that the system is in simulation mode and routes the request for input to the simulation program;

wherein the first program is further operable to:

receive results for the input request from the simulation program; and

pass the results received from the simulation program to the measurement/control program.

6. (Previously Presented) The system of claim 2,

wherein the request for input comprises a request for input through a first I/O channel;

wherein the first program is further operable to determine that the first I/O channel is mapped to a first software routine of the simulation program;

wherein said routing the request for input to the simulation program comprises routing the request for input to the first software routine of the simulation program.

7. (Previously Presented) The system of claim 2, further comprising:

a configuration program;

wherein the configuration program is operable to map the first I/O channel to the first software routine of the simulation program in response to user input requesting the first I/O channel to be mapped to the first software routine of the simulation program.

8. (Previously Presented) The system of claim 2, further comprising:

a configuration program;

wherein the configuration program is operable to turn the simulation mode either on or off in response to user input.

9. (Previously Presented) The system of claim 2,

wherein the simulation mode can be turned on and off without requiring the measurement/control program to be modified, wherein the measurement/control program operates correctly, regardless of whether or not the system is in simulation mode.

10. (Previously Presented) The system of claim 2, further comprising:

a first computer system, wherein the input device is coupled to the first computer system;

wherein the measurement/control program executes on the first computer system.

11. (Previously Presented) The system of claim 10,

wherein the simulation program also executes on the first computer system.

12. (Previously Presented) The system of claim 10, further comprising:

a second computer system, wherein the second computer system is coupled to the first computer system by a network;

wherein the simulation program executes on the second computer system.

13. (Previously Presented) The system of claim 2,

wherein the simulation program is operable to simulate a physical system.

14. (Previously Presented) The system of claim 2,

wherein the simulation program is operable to simulate operation of a device.

15. (Previously Presented) The system of claim 2,

wherein the measurement/control program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

16. (Previously Presented) The system of claim 2,

wherein the simulation program comprises a graphical program, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program.

17. (Previously Presented) A method for performing a simulation, the method comprising:

turning a simulation mode either on or off in response to user input;

executing a measurement/control program;

executing a simulation program, wherein the simulation program is operable to simulate a system;

receiving a request for input from the measurement/control program;

determining whether the simulation mode is turned on or off; and

selectively routing the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to the simulation program if the simulation mode is turned on;

routing the request for input to an input device if the simulation mode is turned off.

18. (Previously Presented) A computer-readable memory medium comprising program instructions for performing a simulation, wherein the program instructions are executable to:

turn a simulation mode either on or off in response to user input;

receive a request for input from a measurement/control program;

determine whether the simulation mode is turned on or off; and

selectively route the request for input, depending on whether the simulation mode is turned on or off, wherein selectively routing the request for input comprises:

routing the request for input to a simulation program if the simulation mode is turned on;

routing the request for input to an input device if the simulation mode is turned off.

X. EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

XI. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.